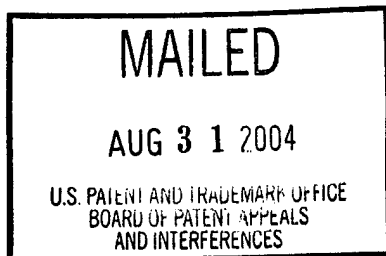


The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 13

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES



Ex parte PAUL PETERSEN

Appeal No. 2004-0037
Application No. 09/419,523

ON BRIEF

Before THOMAS, DIXON and GROSS, Administrative Patent Judges.

THOMAS, Administrative Patent Judge.

DECISION ON APPEAL

Appellant has appealed to the board from the examiner's final rejection of claims 1 through 40.

Representative claim 1 is reproduced below:

1. A method comprising:
obtaining memory configuration information of a computer system, the computer system including memory devices;
determining a memory capacity of the computer system; and
determining memory upgrade options to expand the number of the memory devices based on a residual memory capacity of the computer system.

The following references are relied on by the examiner:

Helm et al. (Helm)	5,129,069	Jul. 7, 1992
Arai	5,280,599	Jan. 18, 1994

Dresser et al. (Dresser)	5,446,860	Aug. 29, 1995
Yoshizawa et al. (Yoshizawa)	5,787,464	Jul. 28, 1998
Cowell	5,860,134	Jan. 12, 1999

Claims 1 through 40 stand rejected under 35 U.S.C. § 103. The examiner has set forth an initial rejection of claims 1, 2, 5, 8, 9, 11-13, 16-22, 25, 28, 29, 31-33 and 36-40 relying upon Arai in view of Yoshizawa. To this basic combination of references the examiner further relies upon Helm as to claims 3, 14, 15, 23, 34 and 35; adds Dresser as to claims 6, 7, 10, 26, 27 and 30 and adds Cowell as to claims 4 and 24.

Rather than repeat the positions of the appellant and the examiner, reference is made to the Brief (no Reply Brief has been filed) for appellant's positions and to the Answer, for the examiner's positions.

OPINION

For the reasons set forth by the examiner in the Answer, we sustain the rejection of the claims on appeal in light of the following embellishments. For his part, appellant has grouped each independent claim, 1, 12, 18, 21, 32 and 38 separately, but together with its respective dependent claims as noted at the middle of page 8 of the Brief. "With this grouping, the claims of each group stand or fall together and do not stand or fall together with any of the claims of any of the other groups." The arguments of each succeeding grouping apply only to the

respective independent claims 1, 12 18, 21, 32 and 38 consistent with this grouping approach. The examiner in the Answer has in turn responded to the arguments in a corresponding manner.

Of the six independent claims on appeal that are specifically argued, we note that independent claims 1, 12 and 18 recite a common feature of expanding the number of memory devices, whereas independent claims 21, 32 and 38 recite a related feature of replacing at least one or replacing one or more memory devices. We also observe that as otherwise noted, the subject matter of independent claim 21 on appeal corresponds to the subject matter of independent claim 1; that the subject matter of independent claim 32 on appeal corresponds to the subject matter of independent claim 12 on appeal and finally that the subject matter of independent claim 38 on appeal corresponds to the subject matter of independent claim 18 on appeal. This understanding simplifies our further consideration of each of the respective independent claims on appeal.

Each of the six independent claims on appeal corresponds to or is encompassed within the initial stated rejection of the examiner, as noted earlier, based only upon Arai in view of Yoshizawa. Based on the examiner's views expressed at pages 4 and 5 of the Answer in this stated rejection, the examiner considers that the only difference between the claims and Arai "is the explicit recitation of expanding/replacing the number of

memory devices." This position is expanded upon at page 9 of the Answer in the responsive arguments portions of it. It is thus seen that the examiner recognizes the distinction among the independent claims related to the expanding and replacing features as were noted in the previous paragraph.

We agree with the examiner's views that Arai does not relate in any manner to the requirement of claims 21, 32 and 38 of replacing the number of memory devices. On the other hand, we find sufficient teachings and suggestions in Arai alone as to relate to the expanding feature, apparently not appreciated by appellant or the examiner. Arai determines an expanded capacity of memory address space not necessarily in the context of memory devices per se and does so up to 8 megabytes. Note the showings in Figures 1 and 2 as well as Figure 9. The discussion at the bottom of column 1 of Arai relates to the prior art EMS system where the discussion beginning at line 31 clearly indicates that there exists prior art software or instructions on which to control the so-called EMM(Expanded Memory Manager), whereas the bottom of column 1 beginning at line 54 indicates that the memory address space was known to be one megabyte or more. Figures 1 and 2 collectively show that up to 8 megabytes as well may be separately addressable; such feature is shown as well in Figure 9. Thus the maximum storage capacity or the residual memory capacity appears to be 8 megabytes. These teachings and showings

alone appear to us to confirm the examiner's observations in the Answer that Arai teaches the feature of the last clause of claim 1 on appeal of "determining memory upgrade options to expand the number of the memory devices based on a residual memory capacity of the computer system."

These capabilities are expanded upon based upon the Figure 3 showing and its discussion beginning at column 3 where the BIOS ROM 13 has programs resident in it which perform an operation represented by the flow chart shown in Figure 5 which determines the nature of the expansion/extension of the memory according to Arai's contributions in the art. Thus, there are clearly additional teachings of software or instructions relating to programable devices (see the explicit recitations of these capabilities in independent claims 12, 18, 32 and 38). Column 4 continues this discussion of the software orientation as well as makes clear that the system of Arai relates to memory capacity determinations in various configuration embodiments, as well as the feature that it is the software which controls these determinations as claimed.

Note the discussion of Figure 9 at column 6 of Arai as well. In accordance with the showing in Figure 4, it is the user who is given the option to determine the nature of the expansion/extension of the memory because the display unit 17 of Figure 3 displays the options, a portion of which appears to be

depicted as box 18 in Figure 4.

Thus, we note again that it appears to us that the artisan would well appreciate that Arai alone teaches explicitly expansion capabilities, but no replacing capabilities as well as no explicit teaching of relating these expansion abilities to memory devices per se.

We agree with the examiner's additional reliance upon Yoshizawa because it makes explicit what appears to us to have been implied to the reader/artisan from Arai's teachings alone. Yoshizawa makes clear that it is known in the art to use various expansion slots on which memory may be added or replaced. Yoshizawa's title even reveals the memory expansion capability, which clearly dovetails with the memory expansion abilities of Arai, since it is in the context of extraction and insertion, which clearly is a replacement function as recited in independent claims 21, 32 and 38 on appeal. Various embodiments are shown in Yoshizawa but, as the examiner has made reference, the showings in Figures 1 through 3A are sufficient for illustrative purposes here. The logic shown in Figure 3A permits the user of the system to extract and insert (replace) and/or the ability to just insert/add memory in a single or a plurality of memory slots within a computer system. The showing in Figure 8 relates more specifically to a replacement operation and the showing in Figure 11 relates to the determination of open slots from which memory

may be expanded or added. Also dovetailing with Arai's teachings noted earlier with respect to capacity determinations, these logic flow charts in Figures 3A, 8 and 11 show that a determination is made of the capacity of the system once extraction/insertion operations or replacing operations have occurred. As noted by the examiner and revealed in the last sentence of the abstract, "Memory may be expanded in computer systems that do not have an open memory slot by replacing the installed memory with a memory device having a larger capacity." All of these contributions of Yoshizawa are in addition to what has been recognized at column 1 of the prior art of the ability to expand memory by adding more memory in existing, extra memory slots as well as adding or expanding memory using memory elements in single slot computers where the new memory elements have larger capacity. In either case, it is clear from the summary of the invention that memory may be replaced to the extent recited in independent claims 21, 32 and 38.

Based upon the examiner's positions and the statement of the rejection at pages 4 and 5 of the Answer as well as the discussion beginning at page 9 of the Answer in the responsive arguments portion of it, our remarks have addressed in our own way the subject matter argued with respect to each of the independent claims on appeal in the context that we have established earlier among them. The features that we have noted

in Yoshizawa are compelling reasons to modify and/or embellish upon the generalized teachings in Arai and the positions generally set forth by the examiner in the Answer as to the motivation for utilizing Yoshizawa in Arai's system. The feature of Yoshizawa's teachings of allowing the insertion and extraction of memory modules while the computer system is online or otherwise operating is an additional basis for the desirable combinability to the artisan of Yoshizawa with Arai.

In closing, since we have found that the examiner has readily addressed each of the disputed features recited in each of the respective independent claims on appeal and provided adequate motivation for the combinability of Arai and Yoshizawa within 35 U.S.C. § 103, in addition to our own observations with respect to each of these positions, we affirm the rejection of all claims on appeal within 35 U.S.C. § 103.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED

James D. Thomas
Administrative Patent Judge

Joseph L. Dixon /
Administrative Patent Judge

Anita Pellman Gross
Administrative Patent Judge

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ELD

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Coe F. Miles
Trop, Pruner, Hu & Mile P.C.
8554 Katy Freeway
Suite 100
Houston, TX 77024